PATENT
Attorney Docket No.: 8117-15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Patent application of Graham McCreath, et al.	: : Group Art Unit: : Not Yet Assigned
Serial No.:	Not Yet Assigned	:
Filed:	Concurrently Herewith	: Examiner: : Not Yet Assigned
For:	**Purification of Fibrinogen From Milk By Use Of Cation Exchange Chromatography**	:

PRELIMINARY AMENDMENT

Commissioner for Patents
BOX PATENT APPLICATION
Washington, D.C. 20231

Dear Sir:

Kindly amend the above-identified patent application, without prejudice, as follows.

In the Specification:

Page 1, after line 1, insert the following paragraph:

CERTIFICATE OF MAILING
UNDER 37 C.F.R. 1.10

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I hereby certify that this correspondence, along with any paper referred to as being attached or enclosed, and/or fee, is being deposited with the United States Postal Service, "EXPRESS MAIL - POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10, on the date indicated above, and addressed to: Commissioner for Patents, Washington, D.C. 20231.

Therese McKinley
Signature of person mailing paper

Therese McKinley
Type or print name of person

This is a continuation of co-pending international application PCT/GB99/03197, having an international filing date of September 24, 1999, which claims the benefit under 35 U.S.C. 119(e) of the filing date of provisional application Serial No. 60/103,397, filed October 7, 1998, abandoned.

In the Claims:

Cancel claims 35 and 39.

Rewrite claims 3, 4, 6, 8-10, 12, 13, 15-25, 27 and 30 as follows. A mark-up of the amended claims as required by 37 CFR 1.121(c)(ii) is attached hereto as Appendix A.

3. (Amended) A method as claimed in claim 1 wherein the condition in step (a) is that the substrate and the milk is at a pH which is higher than the pI value of fibrinogen.

4. (Amended) A method as claimed in claim 1 wherein the condition in step (a) is that the substrate and the milk is at a pH which is greater than pH 5.5.

6. (Amended) A method as claimed in claim 1 wherein steps (b) and (c) are performed at a pH greater than pH 5.5 but less than pH 14.0.

8. (Amended) A method as claimed in claim 6 wherein the irrigating means in step (c) has an ionic strength of equal to or greater than 0.10M and a pH of 5.5-6.5, or an ionic strength of equal to or greater than 0.05M and a pH of greater than 6.5.

9. (Amended) A method as claimed in claim 1 wherein the milk is whole milk, skimmed milk, milk whey or milk fraction.

10. (Amended) A method as claimed in claim 1 wherein the milk contains one or more agents capable of disrupting casein micelles.

12. (Amended) A method as claimed in claim 10 wherein the agent is EDTA, EGTA or citrate.

12. (Amended) A method as claimed in claim 10 wherein the agent is EDTA, EGTA or citrate.

13. (Amended) A method as claimed in claim 1 wherein the substrate is in a batch format or a column format.

15. (Amended) A method as claimed in claim 1 wherein the fibrinogen is transgenic fibrinogen.

16. (Amended) A method as claimed in claim 1 wherein the fibrinogen is human fibrinogen.

17. (Amended) A method for obtaining fibrinogen from milk comprising subjecting milk to ion exchange chromatography.

18. (Amended) The method as claimed in claim 17 wherein the obtained fibrinogen is at least 60% pure.

19. (Amended) The method as claimed in claim 17 wherein the milk contains one or more agents capable of disrupting casein micelles.

20. (Amended) The method as claimed in claim 19 wherein the agent is a chelating agent.

21. (Amended) The method as claimed in claim 19 wherein the agent is EDTA, EGTA or citrate.

22. (Amended) The method as claimed in claim 17 wherein the cation exchange chromatography is in a batch format or a column format.

23. (Amended) The method as claimed in claim 22 wherein the column format of contacting milk with a cationic exchange media is by fixed bed adsorption, expanded bed adsorption or fluidised bed adsorption.

24. (Amended) The method as claimed in claim 17 wherein the fibrinogen is transgenic fibrinogen.

25. (Amended) The method as claimed in claim 17 wherein the fibrinogen is human fibrinogen.

27. (Amended) Fibrinogen obtainable according to the method as claimed in claim 16.

30. (Amended) A fibrin adhesive or sealent as claimed in claim 28 comprising two components, one component containing fibrinogen and Factor XIII and the other component containing thrombin and Ca^{2+}.

Remarks

Claims 1-34 and 36-38 are pending in the application. The claims have been amended to reduce dependencies or to conform to US practice.

A paragraph has been inserted to cross-reference the earlier US applications to which benefit is claimed under 35 USC 119(e) and 120, in compliance with 37 CFR 1.78.

Respectfully submitted,

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APPENDIX A

Mark-up of Claims Amended

3. (Amended) A method as claimed in claim 1 [or claim 2] wherein the condition in step (a) is that the substrate and the milk is at a pH which is higher than the pI value of fibrinogen.

4. (Amended) A method as claimed in [claims 1, 2 or 3] claim 1 wherein the condition in step (a) is that the substrate and the milk is at a pH which is greater than pH 5.5.

6. (Amended) A method as claimed in [any of claims] claim 1 [to 5] wherein steps (b) and (c) are performed at a pH greater than pH 5.5 but less than pH 14.0.

8. (Amended) A method as claimed in claim 6 [or claim 7] wherein the irrigating means in step (c) has an ionic strength of equal to or greater than 0.10M and a pH of 5.5-6.5, or an ionic strength of equal to or greater than 0.05M and a pH of greater than 6.5.

9. (Amended) A method as claimed in [any of claims 1 to 8] claim 1 wherein the milk is whole milk, skimmed milk, milk whey or milk fraction.

10. (Amended) A method as claimed in [any of claims 1 to 9] claim 1 wherein the milk contains one or more agents capable of disrupting casein micelles.

12. (Amended) A method as claimed in claim 10 [or 11] wherein the agent is EDTA, EGTA or citrate.

13. (Amended) A method as claimed in [any of claims 1 to 12] claim 1 wherein the substrate is in a batch format or a column format.

15. (Amended) A method as claimed in [any of claims 1 to 14] claim 1 wherein the fibrinogen is transgenic fibrinogen.

16. (Amended) A method as claimed in [any of claims 1 to 15] claim 1 wherein the fibrinogen is human fibrinogen.

17. (Amended) A method [The use of cation exchange chromatography] for obtaining fibrinogen from milk comprising subjecting milk to ion exchange chromatography.

18. (Amended) The [use] method as claimed in claim 17 wherein the obtained fibrinogen is at least 60% pure.

19. (Amended) The [use] method as claimed in [claims 17 or 18] claim 17 wherein the milk contains one or more agents capable of disrupting casein micelles.

20. (Amended) The [use] method as claimed in claim 19 wherein the agent is a chelating agent.

21. (Amended) The [use] method as claimed in claim 19 [or 20] wherein the agent is EDTA, EGTA or citrate.

22. (Amended) The [use] method as claimed in [any of claims 17 to 21] claim 17 wherein the cation exchange chromatography is in a batch format or a column format.

23. (Amended) The [use] method as claimed in claim 22 wherein the column [mode] format of contacting milk with a cationic exchange media is by fixed bed adsorption, expanded bed adsorption or fluidised bed adsorption.

24. (Amended) The [use] method as claimed in [any of claims 17 to 23] claim 17 wherein the fibrinogen is transgenic fibrinogen.

25. (Amended) The [use] method as claimed in [any of claims 17 to 24] claim 17 wherein the fibrinogen is human fibrinogen.

27. (Amended) Fibrinogen obtainable according to the method as claimed in claim 16 [claims 1 to 16].

30. (Amended) A fibrin adhesive or sealent as claimed in claim 28 [or 29] comprising two components, one component containing fibrinogen and Factor XIII and the other component containing thrombin and Ca^{2+}.